

PALMÆ MALESICÆIV.—Rattans described in Blanco's *Flora de Filipinas*By C. X. FURTADO,*Botanic Gardens, Singapore*

Many attempts have been made to interpret the rattans in Fr. Manuel Blanco's *Flora de Filipinas* (published in Manila in 1837), the latest among them being Merrill's (1918). The earliest interpretations were by MARTIUS (1850) who probably allowed himself to be guided in his work by the frequency with which the species were then collected in the neighbourhood of Manila where Blanco's studies were mainly carried out and also perhaps by their utility about which mention was made by Blanco himself. FR. NAVES (1882) who lived in the Philippines may have identified Blanco's species through a study of the vernacular names and the economic uses, but, as his notions over the specific delimitations of a rattan species were so wide as to enable him to lump together distinct species, his interpretation is not of much scientific value. VIDAL (1883 & 1886) who was better acquainted with rattans and who also worked in the Philippines tried to identify two of Blanco's species one of which has proved to be correct. The most important contribution to the subject was made by BECCARI who, in addition to geographic and economic reasons, tried to detect in Blanco's specific descriptions diagnostic characters that would apply to the Philippine species. Even with such a study Beccari admitted that his interpretation was only tentative and not final, and so in the works published in 1908, 1911, 1913 and 1919 no changes of importance in the nomenclature of the Philippine rattans are involved on the basis of this interpretation. MERRILL (1918) however, published an extensive commentary on Blanco's *Flora* in which he paid great respect to the vernacular names and economic uses given by Blanco and as a result of study of these names, of the uses of the rattans in the Philippines and of their geographical distribution rather than of Blanco's botanical descriptions he made certain identifications either confirming, or dissenting with, those of previous authors. Accordingly he made several changes in the nomenclature of the Philippine rattans involving in some cases new combinations (cf. also Merrill, 1922).

This procedure adopted by Merrill is most unusual. A field botanist often gets a guide inexperienced in the vernacular names of plants and so the information recorded in the field pertaining to vernacular names and economic

uses of a plant is frequently erroneous. Further the inter-course of different tribes or races in a place or the gradual extinction of a plant in the locality due to cutting down of the surrounding forest results sometimes in a gradual change in the vernacular nomenclature. Even Blanco himself, after taking sufficient care to see that the vernacular names incorporated in the book were correct, warned the readers in his preface against taking them as the sure guide in identification of the plants especially because of "the intolerable easiness with which they change and occasion disappointment". (*Sin embargo nadie expere hallar en los nombres una total seguridad, pues es intolerable la facilidad con que los mudan y transtornan*). On the other hand Blanco, without being a trained botanist, drew his specific descriptions from a field study of the plants and sometimes made these descriptions sufficiently extensive. Commenting on the very unfavourable criticisms made by the European botanists on Blanco's *Flora*, Merrill himself writes thus:—

"Considering the circumstances under which it was written, Blanco's *Flora de Filipinas*, even if it is a curious work, is also a remarkable book in some respects. Few botanists in any country or in any time have laboured under greater disadvantages, and Blanco must be credited with initiative, industry, and perseverance. Most of the facts recorded are the result of his observation, and even if he did make numerous grave errors in interpretation of species, his descriptions, as such, on the whole compare favourably with those of his contemporaries. *In fact his descriptions in general, on account of their length, are distinctly superior to very brief diagnoses appearing in the older botanical literature as a means of interpreting the species intended.* The fact should not be overlooked that species proposed by the early European authors, frequently very imperfectly characterized, are more often interpreted by an examination of the actual type specimens preserved in various public and private herbaria, than by the descriptions themselves; in fact a very high percentage of all species described are more or less unintelligible without access to the actual specimens, or duplicates of them, on which they were based. Unfortunately Blanco preserved no herbarium material, and accordingly his species must be interpreted solely by the published data." (1918, p. 24. *The italics are mine*).

Merrill's novel procedure in interpreting Blanco's species and, at the same time, his assurance that Blanco's descriptions were a result of personal observations and were of sufficient length to be worthy of regard induced me to consult the first edition of Blanco's *Flora* and to see whether the rattans listed could be identified on their descriptions.

Since the conclusions I have arrived at were unexpected I may be excused for dealing with them somewhat lengthily.

In studying Blanco's species one must be prepared to make several allowances. Blanco acknowledged that he had had no botanical training and made no claim to being a botanist. He wrote his book for his own use as a hobby; but he was urged to publish it by "some persons who had heard of my work"¹. Further it must be remembered that until recently several botanists described palms in wrong terms, this being especially the case with the descriptions of rattans where the long cirrus to the leaves might be mistaken for a young shoot. This means therefore that one must be prepared to find quite wrong use of botanical terms in the descriptions of the rattans. To my surprise I have found that an adequate allowance has not been made for such eventualities in Blanco's descriptions of the rattans so that it has been difficult to interpret his descriptions. I shall consider here the most important terms in these descriptions that require definition if one is to understand Blanco correctly:

HOJAS: Until recently palm leaves were "branches" to non-botanists, the leaflets being regarded as the real leaves (The other extreme was to regard as compound leaves, branches of definite growth found in such plants as *Phyllanthus* spp. cf. Roxburg's *Flora Indica*). To Blanco the real rattan leaf is also a "branch" and the leaflets are "leaves" (*Hojas*), and when he speaks of the *Hojas* arising from "*los nudos de tallo*" he apparently means that the leaflets arise from the leaf-rachis more or less at places marked by hooked spines beneath, regarding these claws as signs of the nodes (*nudos*). Since he describes in distinctive terms the *Hojas* (leaflets) which are alternate or in groups, I think I am justified in taking *Hojas casi opuestas aladas* to mean that the leaflets are close and equidistant and therefore "almost opposite", a condition not usually found in other leaves where the leaflets are inequidistant or very far apart.

1. "Nunca fue mi pensamiento formar un Tratado de plantas, digno de la luz publica. Una simplice curiosidad me habia hecho ir escribiendo lo que parecia interesante; pero algunos sugetos que tubieron noticia de mi trabajo, me instaron mucho a que le publicase, La historia pues de las plantas de Islas Filipinas debia haverla emprendido un Botanico de profesion, que mereciese la confianza de los sabios, y que se pudiese presentar sin rubor al Publico ilustrado de estos tiempos. Yo no he tenido Maestros, ni herbarios, ni aun casi libros, quando empecé por aficion à entender en esta materia. Mi unico libro entonces era el *Systema vegetaliæ* de Linneo. Aquiri pasados algunos anos otras obras del mismo Autor, y mucho tiempo despues el libro immortal de *Genera plantarum* de Jussieu con otros libros." (From the *Preface*).

HOJUELAS: But if this be granted, what are Blanco's *Hojuelas*? Blanco must have read descriptions of some *Calamus* species where leaflets are described and perhaps interpreting the term leaflets (*hojuelas*) in its literal sense meaning "small leaves" he must have taken it to mean the shorter leaflets that are usually found at the apex of the leaves; or it is possible that he used this term when he wished to describe the characteristics of each one of the leaflets. In Blanco's descriptions both *Hojas* and *Hojuelas* mean leaflets.

PECIOLOS: If *Hojas* and *Hojuelas* be both taken to mean leaflets, it is natural to question the status of Blanco's term *Peciolos*, for rattan leaflets are sessile. In his descriptions Blanco uses this word twice, once under *C. usitatus* and again under *C. maximus*, and once again in describing the way the Philippine people manage to get rid of the spines off the rattans; and it appears from these references that Blanco uses the term in its correct botanic sense to mean petiole. It is strange that while Blanco uses the word *tallo* or *tronco* to mean the real stem as well as the leaf-rachis, he should use an appropriate term to denote the petiole. [I have known people call the coconut leaves branches and yet use word leaf-stalk to mean petiole].

If these interpretations regarding *Hojas* and *Hojuelas* are not accepted, then Blanco's descriptions which were drawn after an actual study of the plants become at once fantastic and impossible of any interpretation except in the way Merrill has done, that is, by attaching the greatest importance to the vernacular names and the economic uses which were cited on the authority of native helpers. Blanco speaks of *Hojas* being ensiform (*figure de espada*), opposite or alternate, solitary or in groups of twos or threes, etc.—characteristics which can never be applied to the real leaves of rattans. If on the other hand this interpretation is accepted then the species become less confusing than they are hitherto supposed as will be seen from the interpretations given below.

Calamus gracilis Blanco.

This binomial being antedated by *C. gracilis* Roxb., Kunth (*Enum. Plant.* III, 1841, p. 595) proposed the new name *C. Blancoi* for Blanco's *C. gracilis*. Naves (1882) identified this species with *C. buroensis* Mart. probably because of the resemblance of the leaves of the latter to those of a plant identified by him as the *Talola*—the vernacular name quoted by Blanco under *C. gracilis*. Beccari (1902 p. 204) enumerated the following synonyms under *C. Blancoi*: *C. brevifrons* Mart., *C. parvifolius* Vidal, and *C. usitatus* Blanco *sensu* Mart. In the *Calcutta Annals*

(1908 p. 216) Beccari excluded from *C. Blancoi* the synonym *C. usitatus* Blanco *sensu* Mart. because he found it was actually the female of *C. mollis* Blanco *sensu* Martius, Beccari, etc. and explained the status of his identification thus: "This [*C. Blancoi*] is a much more slender plant than *C. mollis*, but is however very closely related to, and possibly only a variety of that species

..... It is not certain that Cuming's No. 1225 really corresponds to the *C. gracilis* of Blanco, a name which has been changed by Kunth into that of *Blancoi*, the first having been previously employed by Roxburgh for an Indian species. Nevertheless in the absence of those of Blanco, we may take as the type-specimens those distributed by Cuming under the above mentioned number 1225."

Confirming the identification of Beccari, Merrill (1918 p. 86) wrote thus: "This species is manifestly very closely allied to *Calamus usitatus* Blanco (*C. mollis* Auct., non Blanco) and is perhaps identical with it. I have seen no specimen of Cuming 1225, or Loher 1376, on which Beccari based his conception of *Calamus Blancoi* but our Batangas material of *talola* [the vernacular name given by Blanco] seems to agree with the figure given by Beccari, taken from Cuming 1225, and with the description..... Batangas is the only province, so far as our collections and data show, where *talola* is in use as a name for *Calamus*, and it is apparently generally applied to the specific form distributed herewith. The closely allied *Calamus usitatus* Blanco (*C. mollis* Auct., non Blanco) is known in the same locality as *talolang lutukan*. The striking differences are that in *Talola* the leaflets are constantly solitary, while in *talolang lutukan*, and in very many of our numerous specimens of *Calamus usitatus* some of the leaflets are frequently paired on the same side of the rachis. It was erroneously reduced by Naves to *Calamus buroensis* Mart., a species that does not extend to the Philippines."

As to the vernacular name *talola*, I find it mentioned by Merrill (1922, I p. 153) also under *C. siphonospathus* which shows that it may not be a sure guide in the identification of the species. According to Mercado (1880 p. 50), the *talola* is a slender rattan sometimes attaining the thickness of a thumb—a probable reason why it was called *gracilis* by Blanco—and both Mercado and Blanco state that it is a source of the rattans used by the magistrates (*ministros de justicia*) [for punishing criminals]. It appears to me therefore that the word *talola* was commonly used in and around Manila for any *Calamus* that supplied the thin rattans used in the courts of justice and it is extremely doubtful whether Blanco or a Filipino would have been able to distinguish between *C. usitatus* Blanco

sensu Merrill and *C. Blancoi* Kunth *sensu* Beccari and say from which of the two the magistrates derived their canes, especially when the canes are so much alike as to puzzle even expert botanists.

Further Blanco says that the leaflets in *C. Blancoi* Kunth (= *C. gracilis* Blanco) are very often grouped in pairs on each side of the rachis, the pairs sometimes being opposite and sometimes alternate in one and the same leaf or plant (*Hojas ya opuestas ya alternas, aladas de dos en dos, y tambien simples*). The only species to which this description applies is *C. mollis* Blanco *sensu* Naves and Beccari which is identical with *C. usitatus* Blanco *sensu* Vidal and Merrill. Being also very common (*mui comun*) as stated by Blanco, in the neighbourhood of Manila, it was probably also a source of *Talola* used in the Manila courts. *C. Blancoi sensu* Beccari and Merrill, on the other hand, has leaflets which are usually solitary and is also a rare plant in the Philippines. As to the spinescence of the leaflets, *C. usitatus sensu* Vidal and Merrill is extremely variable, and one could establish several varieties on this character.

Therefore I consider the name *C. Blancoi* Kunth (the type of which is *C. gracilis* Blanco) should be given to the plants referred by Martius, Naves and Beccari to *C. mollis* Blco. and by Martius, Vidal and Merrill to *C. usitatus* Blco. *Calamus Haenkeanus* Mart. is also to be referred here. But *C. brevifrons* Mart. which was hitherto regarded as a synonym of *C. Blancoi* Kunth is a different species and becomes a valid name of which *C. parvifolius* Vidal (non Roxburgh) is a synonym. *C. buroensis* Mart. to which *C. gracilis* Blanco (= *C. Blancoi* Kunth) was referred by Naves does not occur in the Philippines.

Calamus maximus Blanco.

This was until recently listed as an unidentifiable species and Naves (1882) suggested that it may be a *mixtum compositum*. In 1904, however, Beccari thought that he recognised it in a Philippine plant communicated to him by Merrill sub. no. 1893; later, as a consequence of an examination of more extensive material from the Philippines, Beccari (1905) relegated Blanco's species as a synonym of *C. ornatus* var. *philippinensis*, making Merrill's specimen the type of a new species, *C. Merrillii* Becc., a view upheld by him in his later works (1908; 1919). A difficulty however arose from this interpretation, for the leaflets in *C. ornatus* v. *philippinensis* are without any bristles on their costæ, whereas in *C. maximus* they are described as having bristles on their two lateral nerves above and the median nerve beneath. Beccari explained away this difficulty by

supposing that the leaflets of younger plants are perhaps spiny according to the description, for he had noticed a very similar phenomenon occurring in the Malayan forms of *C. ornatus*, which are also quite bare in their advanced stages.

Merrill however does not accept this interpretation by Beccari and upholds Beccari's original interpretation as correct on the grounds that the natives still apply almost exclusively the word *Palasan* [one of the vernacular names quoted by Blanco] to *C. Merrillii*, and *Limoran*¹ to *C. ornatus* var. *philippinensis* and that Blanco's description of the leaflets "applies unmistakably" to *C. Merrillii*. Now Blanco describes the leaflets thus: "*Hojuelas lanceoladas, con tres nervios notables, y en los dos laterales una hilera de pelos tiesos en la pagina superior y en la inferior una so hilera de lo mismo*" (leaflets lanceolate, distinctly 3-nerved, armed with rigid hairs along the two lateral nerves above and along one [median] nerve beneath).

Against Merrill's interpretation one can raise equally good objections as against Beccari's. The leaflets of *C. Merrillii* are provided on the nerves with very long setæ which by no means can be said to be rigid (*tiesos*) and which are found many times on both surfaces and the leaflets are not lanceolate but what Blanco would have called *de figura de espada* (ensiform). Further judging from the vernacular names cited by Naves (1882) the word *Palasan* had been applied to more than one species in the Philippines. If one disregards the hairiness on the leaflets and attaches more importance to the economic uses mentioned by Blanco, there appears to be stronger reasons in favour of Beccari's interpretation than that of Merrill's. Blanco says that *C. maximus* is a common and well-known rattan, the native using its strips for various and delicate wicker works and that its fruits are edible with a not unpleasant taste. [Mercado mentions practically all these uses under the rattan *Palasan* p. 50]. Among the various vernacular names given by Blanco there occurs not only the word *Palasan* but also *Calapi*, the latter being used, according to Blanco, in two native dialects. Now *C. ornatus* v. *philippinensis* has not only lanceolate leaflets and *una semilla oblonga com cuatro angulos confusos* (oblong, obscurely 4-angled seeds) as Blanco describes, but is also called *Calapi* in the vernacular language and has economic uses like the one mentioned by Blanco. I may be allowed to quote here from Elmer's field-notes edited by Beccari in *Elmer's*

1. The vernacular name *Limoran* has been quoted by Beccari (1913, p. 126) under *C. discolor* var. *negrosensis* Becc., but from Merrill's account (1922, p. 148) it appears that the name should have been spelt as *Simoran* or *Simuran*, for Merrill quotes the last name and not the one quoted by Beccari.

Leaflets Philipp. Bot. VIII, 1919, p. 3054: "This is quite common in the woods and forests about Irosin [in Luzon], and is called *Calape* by the Biconales. The natives in other parts of Luzon also call it by that same name, and in central Samar there is a town by the name *Calape*. Its deep cream coloured fruits when ripe are juicy and vinegar sour. The natives of Sorsogon province are very fond of it, and in the fruiting season it is extensively collected and brought into the local markets for sale. A bunch or hand costs five to ten centavos according to its size. Because of the difficulty in getting at the fruit clusters, the natives cut the stem near the ground and pull the plant with the fruits down for its ripe bunches..... Again, instead of utilizing the stem by cutting it into rattan strips, it is wastefully discarded."

On *C. Merrillii* Elmer's field-notes run thus: "A very coarse and practically worthless rattan. The Manobo name is *Palasan*."

But returning to Blanco's original description, it appears that Blanco based most of his specific description on a flowering specimen collected by him in the jungle, while the description of the frutis and the enumeration of its vernacular names and economic uses may have been added after its identification by some inexperienced native guides with *Calapi* of the markets; for what impressed Blanco most about *C. maximus* was the peculiarly shaped spathes and spathels in the inflorescence, of which organs he does not make any mention in the description of other species. He describes the inflorescence thus: "*Flores en panojas compuestas de espigas, con las florecillas distichas y muy apretadas; cada espiga tiene en la base un involucreo de figura de embudo. Cada florecilla tiene igualmente en la base una escama de la misma figura.*" Considering that in a non-technical language *Espiga* may be used for a partial inflorescence and that modern terminology of *Calamus* inflorescence was not known even in quite recent times, I translate Blanco's text thus: "Inflorescence paniculately branched, the flowers being distichous and very close. At the base of each partial inflorescence (*espiga*) there is a funnel-shaped spathe (*un involucreo de figura de embudo*). The base of each flower (*i.e.* involucrophore), has also a similarly shaped spathe (*escama*)." Now *C. siphonopathus* Mart. is the only species that satisfies these conditions regarding the inflorescence and which would have attracted the attention of even an untrained botanist like Blanco to the infundibuliform spathes and spathels, and that has at the same time lanceolate, almost opposite (*casi opuestas aladas*) and, therefore equidistant leaflets bearing spines on both surfaces. This species is extremely variable